

Amendments to the claims

The listing of claims will replace the previous version, and the listing of claims:

Listing of Claims

1-14. (canceled)

15. (currently amended) A high-speed signal transmission system comprising:

waveform analysis means for analyzing a defect relative to signal transmission of a line,

waveform reshaping means for reshaping a sending waveform, said waveform reshaping means including a line driver circuit of adding a current, and

regulator means for controlling the waveform reshaping means to obtain a waveform in a good condition at a receiving end based on an output from the waveform analysis means,

wherein said regulator means is adjusted by statistical search method, and said statistical search method includes one or a combination of genetic algorithm, climbing-up method, annealing method, enumeration method, evolution policy, and taboo search method.

16-18. (canceled)

19. (currently amended) A high-speed signal transmission system comprising:

waveform analysis means for analyzing a defect relative to signal transmission of a line,

waveform reshaping means for reshaping a sending waveform, said waveform reshaping means including a line driver circuit of adding a current, and

regulator means for controlling the waveform reshaping means to obtain a waveform in a good condition at a receiving end based on an output from the waveform analysis means,

wherein said regulator means is adjusted by statistical search method,

said statistical search method includes one or a combination of genetic algorithm, climbing-up method, annealing method, enumeration method, evolution policy, and taboo search method, and

~~according to claim 18,~~ wherein said line driver circuit includes a plurality of constant current circuits with a current mirror circuit, a delay circuit of sending data, and a switching circuit for connecting the plurality of the constant current circuits to the line based on the sending data or an output from the delay circuit.

20. (currently amended) A high-speed signal transmission system according to claim 19 ~~claim 17~~, wherein said line is matched with a characteristic impedance from a sending end to a terminal end, a sense amp on the receiving end receives a mixture of the sending waveform and a total-reflection waveform, and a terminal resistance is inserted in the sending end so that the total-reflection waveform is not transmitted from the sending end through re-reflection, said waveform analysis means being connected to the sending end.

21. (currently amended) A high-speed signal transmission system according to claim 19 ~~claim 17~~, wherein said line has a structure that a TEM mode is maintained.

22. (previously presented) A high-speed signal transmission system according to claim 21, wherein said line has a portion where an electromagnetic wave leaks into air, said portion being coated

with a high permittivity material so that an effective permittivity of the portion matches a permittivity of an internal dielectric member.

23. (previously presented) A high-speed signal transmission system according to claim 21, wherein said line has one of structures of a pair coplanar, stacked-pair, guard stacked-pair, and guard coplanar.

24. (currently amended) A high-speed signal transmission system according to claim 19 ~~claim 17~~, wherein said line has a driver circuit and a receiver circuit formed of a MOS-FET of Si or SiGe, or an n-channel MES-FET of GaAs, and includes a differential output circuit and differential input circuit without ground connection, a schottky high-speed bipolar differential circuit, or a bus-switch circuit; varactors having a structure of one of a complementarily same MOS-FET, MES-FET, and a bipolar transistor are arranged in all transistors; and complementary operating elements have a common well floated electrically.

25. (new) A high-speed signal transmission system according to claim 15, wherein the waveform analysis means analyzes a whole reflected signal of a test signal transmitted.

26. (new) A high-speed signal transmission system according to claim 25, wherein the waveform reshaping means reshapes the sending waveform based on a result from the waveform analysis means in order to obtain a desirable waveform the receiving end.

27. (new) A high-speed signal transmission system comprising:

waveform analysis means for analyzing a defect relative to signal transmission of a line,

waveform reshaping means for reshaping a sending waveform, said waveform reshaping means including a line driver circuit of adding a current, and

regulator means for controlling the waveform reshaping means to obtain a waveform in a good condition at a receiving end based on an output from the waveform analysis means, said regulator means being adjusted based on a frequency axis and a time axis by genetic algorithm.